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Comparison the immunogenicity of HIV-1 P24-Nef candidate vaccine conjugated to FliC protein of *Pseudomonas aeruginosa* formulated in Montanide ISA 70 using subcutaneous and intramuscular routes injection in BALB/c mouse model

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Background: Today, HIV infection is referred to as a serious threat to humanity. Many efforts have been made to prepare an effective vaccine, but have remained inconclusive. Therefore, new strategies in order to increase the immune response to vaccines using immunological adjuvant such as TLR agonists like the *Pseudomonas aeruginosa flagellin* (FliC) were presented. In this study, given the effect of immunization route on the immune response induced by vaccination, candidate vaccine HIV-1p24-Nef conjugated to FliC molecule was injected in different routes and the immune responses were evaluated.

Materials & Methods: BALB/c mice were distributed into 6 groups and immunized with 20 µg/100µl of HIV-1 p24-Nef conjugated to FliC, p24-Nef and FliC which were prepared in Montanide ISA70, subcutaneously and intramuscular three times under the same conditions. Two weeks after the final boosting, lymphocyte proliferation was measured by Brdu method, the response of IL-4 and IFN-γ cytokines, as well as the level of total antibodies and their isotypes were evaluated using ELISA method. Also IFN-γ ELISPOT was performed to detect the memory T cells frequency.

Results: Results show that, in comparison with control groups, the conjugated HIV-1p24-Nef-FliC significantly increased lymphocyte proliferation responses, higher levels of cytokines responses and IFN-γ producing lymphocytes subcutaneously but the level of humoral immune responses significantly increased in the intramuscular route.

Conclusion: FliC molecule could be used as adjuvant in combination with vaccines candidate against HIV-1.

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